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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,637	06/28/2001	Alan Johnson	1076.40311X00	4492
20457	7590	05/19/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			GELIN, JEAN ALLAND	
			ART UNIT	PAPER NUMBER
			2681	4

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/892,637

Applicant(s)

JOHNSON ET AL.

Examiner

Jean A Gelin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claim 4, the phrase "radio frequency screening can" is not clear.

Clarification or definition of the above phrase is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Arkko et al. (US 6,201,501).

Regarding claims 1, 17, Arkko teaches a portable communications device including a speaker and an antenna, the antenna being associated with an antenna cavity which is arranged to form an audio cavity for the speaker (corresponding to a

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portable mobile device which typically includes a speaker and an antenna, the antenna has hole to aid in sound transmission from the speaker, col. 2, lines 20-36, col. 3, line 36 to col. 4, line 6).

Regarding claim 2, Arkko teaches wherein the antenna comprises a ground plane and a radiating conductor spaced from the ground plane, the antenna cavity comprising the space between the radiating conductor and the ground plane (col. 3, lines 36-55).

Regarding claim 3, Arkko teaches a printed circuit board to which device components are mounted, wherein the ground plane comprises the printed circuit board (col. 3, lines 37-40).

Regarding claim 4, Arkko teaches a printed circuit board (101) to which at least one radio frequency screening can is mounted, wherein the ground plane comprises a surface of said at least one of the screening cans (col. 3, lines 36-65).

Regarding claim 5, Arkko teaches wherein the antenna comprises a patch antenna (col. 3, line 40, fig. 1, item 103).

Regarding claim 6, Arkko teaches wherein the antenna comprises a planar inverted-F antenna (PIFA), which is a hybrid of the patch antenna 103 of fig. 1

Regarding claim 7, Arkko teaches including a housing to which the antenna is mounted, wherein the antenna includes a radiating element spaced from the housing and the antenna cavity comprises the space between the radiating element and the housing (col. 3, line 36 to col. 4, line 6).

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Regarding claim 8, Arkko teaches wherein the antenna is selected from a planar antenna (corresponding to patch 103 and PIFA antennas).

Regarding claim 9, Arkko teaches wherein the speaker is located outside the antenna cavity (i.e., speaker facing the hole or cavity, col. 4, lines 3-5).

Regarding claim 10, Arkko teaches wherein the speaker is located adjacent to the antenna (col. 2, lines 21-26).

Regarding claim 11, Arkko teaches a duct for connecting the speaker to the audio cavity (col. 2, lines 29-32).

Regarding claims 12-14, Arkko teaches wherein the audio cavity comprises a sealed volume, wherein the audio cavity comprises a back volume for the speaker, wherein the audio cavity comprises a front volume for the speaker (figs. 1 and 2, col. 3, line 44 to col. 4, line 6).

Regarding claim 15, Arkko teaches a mobile telephone (fig. 6).

Regarding claim 16, Arkko teaches wherein the speaker comprises a hands-free speaker (i.e., the earpiece device, col. 2, lines 30-33, supports a hands-free speaker).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castell et al. (US 6,717,801) in view of Arkko et al. (US 6,201,501).

Regarding claims 18, 21, and 22, Castell teaches an antenna module for a portable communications device (RF transceiver combined antenna as single package is the module, col. 1, lines 20-24, col. 5, lines 40-51), said device (corresponding to portable computer shown in figs. 6-10) including a housing portion and said antenna module including an antenna and a sound transducer such as a speaker, the module being configured such that, when it is connected to said housing portion of the device (col. 5, line 40 to col. 6, line 49).

Castell does not specifically teach a sealed cavity is formed which comprises an audio cavity for a speaker mounted to the device.

However, the preceding limitation is known in the art of communications. Arkko teaches a cavity is implemented in the conducting portion of the antenna to aid in sound transmission from the speaker mounted facing the cavity (col. 2, lines 21-32, col. 3, line 43 to col. 4, line 6, col. 9, lines 15-36). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to implement the technique of Arkko within the system of Castell in order that for ordinary voice functions of receiving through a speaker, the mobile is operated with the hole of the patch antenna close to the ear of a user (col. 6, lines 44-49).

Regarding claim 19, Castell teaches means for receiving a speaker (col. 5, lines 42-43, col. 6, lines 40-50).

Regarding claim 20, Castell teaches wherein said means comprise a clip arrangement (the clip is read on col. 7, lines 59-61, col. 8, lines 29-31).

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Winstead et al. (US 6,301,489) teaches flat blade antenna and flip are mounted to the radiotelephone.

Rudisill et al. (US 6,208,874) teaches telephone assembly with automatic antenna adjustment.

Jones et al. (US 6,531,985) teaches the antenna requires a small space inside the computer housing.

Kuisima (US 6,259,929) teaches radio phone composable of separate modules.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean A Gelin whose telephone number is (703) 305-4847. The examiner can normally be reached on 9:00 AM to 6:30 PM.

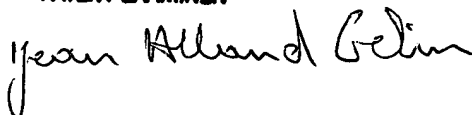
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erika A Gary can be reached on (703) 308-0123. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGelin  
April 22, 2004

**JEAN GELIN**  
**PATENT EXAMINER**

A handwritten signature in cursive script that reads "Jean Allard Gelin".